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IEEE JNL	IEEE Journal or Magazine
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1. **Modular synchronization in distributed, multiversion databases: version control control**
Agrawal, D.; Sengupta, S.;
Knowledge and Data Engineering, IEEE Transactions on
Volume 5, Issue 1, Feb. 1993 Page(s):126 - 137
Abstract:

A version control mechanism is proposed that enhances the modularity and extensibilit concurrency control algorithms. The multiversion algorithms are decoupled into two cor control and concurrency control. This permits modular development of multiversion pro simplifies the task of proving the correctness of these protocols. A set of procedures fo described that defines the interface with the version control component. It is shown tha interface can be used by the database actions of both two-phase locking and time-stan control protocols to access multiversion data. An interesting feature of the framework is execution of read-only transactions becomes completely independent of the underlying control implementation. Unlike other multiversion algorithms, read-only transactions in not modify any version-related information, and therefore do not interfere with the exec transactions. The extension of the multiversion algorithms to a distributed environment simple

Abstract | Full Text: PDF(1208 KB) **IEEE JNL**

Replication: DB2, Oracle, or Sybase?

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Volume 24 , Issue 4 (December 1995) table of contents
Pages: 95 - 101
Year of Publication: 1995
ISSN:0163-5808

Author Doug Stacey Comdisco Inc., Rosemont, IL

Publisher ACM New York, NY, USA

↑ ABSTRACT

Is replication salvation or the devil in disguise? Here's what three implementations tell us

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Parvathi Chundi , Daniel J. Rosenkrantz , S. S. Ravi, Multi-site distributed database transactions utilizing deferred update, Proceedings of the 1997 ACM symposium on Applied computing, p.118-122, April 1997, San Jose, California, United States

Fernando Pedone , Rachid Guerraoui , André Schiper, The Database State Machine Approach, Distributed and Parallel Databases, v.14 n.1, p.71-98, July 2003

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↑ INDEX TERMS

Primary Classification:
H. Information Systems
↳ **H.2** DATABASE MANAGEMENT

Additional Classification:
H. Information Systems
↳ **H.2** DATABASE MANAGEMENT
↳ **H.2.3** Languages
↳ **Nouns:** SYBASE; DB2
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General Terms:
Design, Management, Performance, Theory

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TDC Little, A Ghafoor - Selected Areas in Communications, IEEE Journal on, 1991 - ieeexplore.ieee.org
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C Bussler, S Jablonski - Research Issues in Data Engineering, 1994. Active Database ..., 1994 - ieeexplore.ieee.org
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MH Wong, D Agrawal - Theoretical Computer Science, 1995 - Elsevier
... Theoretical Computer Science Context-specific **synchronization** for atomic data types in object-based **databases** Man Hon Wong", Divyakant Agrawal b.* ...
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Management of a remote backup copy for disaster recovery

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Source **ACM Transactions on Database Systems (TODS)** archive
Volume 16 , Issue 2 (June 1991) table of contents
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Publisher ACM New York, NY, USA

↑ ABSTRACT

A remote backup database system tracks the state of a primary system, taking over transaction processing when disaster hits the primary site. The primary and backup sites are physically isolated so that failures at one site are unlikely to propogate to the other. For correctness, the execution schedule at the backup must be equivalent to that at the primary. When the primary and backup sites contain a single processor, it is easy to achieve this property. However, this is harder to do when each site contains multiple processors and sites are connected via multiple communication lines. We present an efficient transaction processing mechanism for multiprocessor systems that guarantees this and other important properties. We also present a database initialization algorithm that copies the database to a backup site while transactions are being processed.

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Note: OCR errors may be found in this Reference List extracted from the full text article. ACM has opted to expose the complete List rather than only correct and linked references.

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↑ INDEX TERMS

Primary Classification:

C. Computer Systems Organization
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    - **Subjects:** Transaction processing
  - **H.2.7** Database Administration

Subjects: Logging and recovery

General Terms:
Algorithms, Reliability

Keywords:
database initialization, hot spare, hot standby, remote backup

REVIEW

"Peter John Trueman"

Two multicomputer systems are linked by multiple communication paths, and each has a partitioned relational database. The primary system processes the database transactions, and the other acts as a hot-standby that will take over the processing in the event of the primary system failing. This paper describes the decentralized algorithm used to ensure that the backup system's database is up to date and consistent. The algorithm is intended for use in applications that have a lot of transactions and need a quick response time. So, rather than use an expensive two-phase commit protocol to ensure that a transaction atomically updates both systems, the transaction simply commits and then propagates to the backup. This means that when the primary fails, some committed transactions may be lost and others may have to be discarded to maintain consistency; for example, if the transaction that created a bank account is lost, updating that account would be wrong. This risk is deemed to be economically acceptable given the performance requirement; if the consequences of a lost transaction are high, however, it is possible to use an atomic commit over both systems. After some good background and introductory sections, the paper defines what it means for the backup system to be consistent, and then describes how the backup system is initialized and updated, and argues that this process results in a consistent backup. Although the paper is lengthy, it is not too long; it is well structured and clear. The reader who wants just as much information as can be easily remembered can read the first ten pages, leaving the rest for the serious student. The paper is well worth reading. *Online Computing Reviews Service*

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